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CENTRAL INTELLIGENCE AGENCY REPORT

INFORMATION REPORT

CD NO

COUNTRY East Germany

DATE DISTR 13 February 19[illegible]

SUBJECT Manufacture of Infra-red Monocrystals at Zeiss, Jena

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SUPPLEMENT TO REPORT NO.

THIS IS UNEVALUATED INFORMATION

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The mirror monochromator (Spiegelmonochromator) developed by VEB Carl Zeiss, Jena is an infrared spectrograph used for the analysis of the composition of material compounds and for the observation of chemical-technical processes. The most important part of the device is the prism, which consists of a synthetic monocrystal made from extremely pure material which can be penetrated by infrared rays. The Zeiss firm has resumed research and development work for the cultivation of infrared monocrystals. This work was started at the end of the 1920's and was particularly intensified during World War II. The monocrystals, which are now manufactured by the firm in the form of prismatic windows and plates, cover the infrared range from about 3 to 40 mu. None of the crystals covers the entire range; it is necessary to use crystals of various materials which have the most favorable penetrability and dispersion within the desired specific range.

2. The following are the crystals now being produced at VEB Carl Zeiss and available for sale there. The range indicated with each of them indicates the limit range for use in the infrared range as prism material for monochromators:

a. Sodium fluoride in blocks up to 90 millimerers in diameter and 70 millimeters high. Range limit: about 7 mu.

b. Lithium fluoride in blocks up to 85 millimeters in diameter and 60 millimeters high. Range limit: about 7 mu.

c. Sodium chloride (salt) in blocks up to 150 millimeters in diameter and 70 millimeters high. Range limit: about 15 mu.

d. Potassium chloride (Sylvin) in blocks up to 150 millimeters in diameter and 70 millimeters high. Range limit: about 21 mu.

e. Potassium bromide in blocks up to 90 millimeters in diameter and 60 millimeters high. Range limit: about 28 mu.

f. Potassium iodide in blocks up to 85 millimeters in diameter and 80 millimeters high. Range limit: about 30 mu.

g. [illegible] in blocks up to 50 millimeters in diameter and 80 millimeters

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high. Range limit: about 38 mu.

4. Because of raw material shortages the monocrystals mentioned under b and g are manufactured in limited numbers only.